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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,311	05/11/2006	Shozaburo Konishi	04703/0203962-US0	5058
7278 DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770	7590 01/05/2010		EXAMINER VASISTH, VISHAL V	
			ART UNIT 1797	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/567,311

**Applicant(s)**

KONISHI ET AL.

**Examiner**

VISHAL VASISTH

**Art Unit**

1797

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-10,13,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-10,13,16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicants' response filed on 9/18/2009 amended independent claims 1 and 9, dependent claims 2, 5, 8 and 10 and cancelled claims 3-4, 11-12 and 14-15.

Applicants' amendments necessitated a new ground of rejection as set forth below.

***Specification***

2. The amendment filed 9/18/2009 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "at least one friction modifier (C) selected from C1-C40 esters, amines, amides, alcohols, ethers, carboxylic acids, ketones, aldehydes, and carbonates, except for glycol esters and ETHER AMINES." When looking to the specification there is no mention of such a limitation. Paragraphs [0052] and [0118] of the instant specification wherein friction modifiers including ethers and amines are discussed do not mention ether amines specifically as friction modifiers, the same can be said regarding Table 1 of the instant specification which does not give any ether amine friction modifier.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-2, 5-10, 13 and 16-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The added material in independent claims 1 and 9 and dependent claim 8 which is not supported by the original disclosure is as follows: " at least one friction modifier (C) selected from C1-C40 esters, amines, amides, alcohols, ethers, carboxylic acids, ketones, aldehydes, and carbonates, except for glycol esters and ETHER AMINES." When looking to the specification there is no mention of such a limitation. Paragraphs [0052] and [0118] of the instant specification wherein friction modifiers including ethers and amines are discussed do not mention ether amines specifically as friction modifiers, the same can be said regarding Table 1 of the instant specification which does not give any ether amine friction modifier.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-2, 5-10, 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al., JP Publication No. 2001-316686 (hereinafter referred to as Miyake) in view of Yagishita, US Patent Application Publication No. 2005/0272616 (hereinafter referred to as Yagishita).

Miyake discloses a lubricant (as recited in claim 9) and a system having a pair of DLC contacting faces being opposed to each other and moving relative to one another, wherein at least one of which is coated with a DLC film (as recited in claims 1, 8-9) and is suitably used in lubricating oils such as an engine and transmission oil (as recited in claims 1 and 6) (Para. [0001]).

The sliding members have a lubricant interposed between them used to lubricate the sliding members (as recited in claim 8) wherein the lubricant is a mineral or synthetic base oil (base oil as recited in claims 1 and 8-9) and has additives including molybdenum dithiocarbamate (sulfur-containing molybdenum complex as recited in claims 1 and 8-9) with a concentration of 0.01-0.2 wt% of molybdenum (within the range as recited in claim 13) and zinc dithiophosphate (phosphorus-based anti-wear agent as recited in claims 2, 10 and 16) (Para. [0020]).

The composition of Miyake does not explicitly disclose non-DLC contact surfaces having no DLC film wherein said lubricant is interposed between the non-DLC contact surfaces as recited in claim 7. The examiner is of the position that one of ordinary level of skill in the art would envisage using the same lubricant composition in an internal combustion engine for parts that are non-DLC containing contact surfaces.

Miyake as discussed above discloses the presence of a mineral or synthetic base oil to be used in combination with a DLC coating. Miyake does not, however, explicitly disclose a base oil wherein at least one of a hydrocracked mineral oil, a wax-isomerized mineral oil, and a poly-alpha-olefin base oil, and has a kinematic viscosity of 2 to 20 mm<sup>2</sup>/s at 100° C, a total aromatic content of not higher than 5 mass %, and a total sulfur content of not higher than 0.005 mass %. Miyake also does not disclose a friction modifier and a metal detergent.

Yagishita discloses a lubricant composition for use in an internal combustion engine comprising a base oil derived from hydrocracking and produced by isomerizing GTL wax (as recited in claims 1 and 8-9) (Para. [0020]) wherein the hydrocracked base oil has a kinematic viscosity of 10 mm<sup>2</sup>/s or less (which overlaps the kinematic viscosity range as recited in claims 1 and 8-9) (Para. [0025]), has a total aromatics content of 2 mass% or less (within and encompassing the aromatics range as recited in claims 1 and 8-9) (Para. [0024]) and a total sulfur content of 0.1 mass% or less (within and encompassing the sulfur content range as recited in claims 1, 5 and 8-9) (see Abstract).

The fully formulated composition of Yagishita further comprises additives including neutral alkaline earth metal salicylates (a sulfur-free, neutral metal detergent

as recited in claims 1 and 8-9) (Para. [0028] and [0048]), friction modifiers including aliphatic acid esters, aliphatic amines, aliphatic acid amides and aliphatic ethers (as recited in claims 1 and 8-9) (Para. [0061]) and anti-wear additives including metal phosphates (sulfur-free phosphorus anti-wear compound as recited in claims 2, 10 and 17). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the base oil and additives of Yagishita in the composition of Miyake because all the additives are very well known in the art and would conventionally be used to enhance friction, detergency and anti-wear properties in the composition.

### ***Response to Arguments***

8. Applicants' arguments filed on 9/18/2009 with respect to claims 1-2, 5-10, 13 and 16-17 have been fully considered and are not persuasive.

Applicants argue that in light of Miyake's disclosure friction modifiers would not exhibit lower frictional coefficients on DLC surfaces. Therefore, one of ordinary skill in the art would not look to add a friction modifier to the lubricant composition of Miyake. This argument is not persuasive. Miyake states that extreme pressure additives do not easily form films or absorb on substrates with DLC or similar coatings, but Miyake does disclose the presence of an anti-wear additive such as zinc dithiophosphate and an antioxidant such as molybdenum dithiocarbamate. Miyake discloses that full expression of these additives is difficult but that the composition of Miyake along with the content of the coating can be combined in order to resolve the issue and embody a composition with low friction characteristics.

Applicants argue that the present invention provides unexpected results and point to the data in Table 1 of the instant specification to support their position. The data, however, is not commensurate with the scope of the claims. For example, the additives blended with the base oil to formulate the finished composition are in very specific concentrations and are very specific compounds. For instance in base oil 1, the friction modifiers are glycerin monooleate. Claim 1 merely recites a sulfur-containing molybdenum complex and does not include any of the other additives or any of their respective concentrations. Therefore, the arguments are not persuasive to show unexpected results. Also, in order to demonstrate unexpected results the criticality of the ranges need to be shown and compared to the closest prior art. Applicants did narrow the base oils in a manner that demonstrates unexpected results but none of the additives were narrowed in the same manner and the additive compounds were not limited. The example oils also use friction modifiers that are currently outside the scope of the amended, independent claims.

Finally applicants argue that Yagishita is silent regarding the frictional coefficient of the composition and therefore in light of the disclosure of Miyake one of ordinary skill in the art would not look to Yagishita for additives that are not present in Miyake. This argument is not persuasive. The combination of Miyake and Yagishita disclose all of the limitations recited in the instant claims and therefore the composition produced by the combination of references would possess the frictional properties discussed in the instant application. Furthermore, Yagishita discloses friction modifiers in order to reduce friction in internal combustion engine compositions that have metal surfaces.

***Conclusion***

9. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **VISHAL VASISTH** whose telephone number is (571)270-3716. The examiner can normally be reached on **M-R 8:30a-5:30p**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VVV

/Ellen M McAvoy/  
Primary Examiner, Art Unit 1797